ABSTRACT

An embodiment of a decoder comprises processing elements operating on associative processing. The processing elements may comprise a logic and memory element. Each row of the decoder comprises one or more associative processing elements controlled by a row control element to determine the two minimum values. Each column comprises one or more associative processing elements, an input processing element, and a column control element to determine hard decision bits. The usage of processing elements to construct a decoder may reduce the gate count and decrease the interconnects used to couple the elements.